Amendments to the Claims:

Claims 1- 10 cancelled

11. (original) An apparatus comprising:

a light source;

an optical train for directing light from said light source at a substrate including a surface having fluorescently marked regions;

a translation system co-operatively arranged with said optical train and constructed to support and displace said substrate;

an auto-focusing system constructed and arranged to focus said directed light onto said surface;

a detector for detecting fluorescent light from said fluorescently marked regions of said surface in response to said light; and

a computer arranged to control operation of said light source, said detector, said translation system and said auto-focusing system to execute auto-focusing by controlling said translation system and bringing into focus corners of said surface; said computer being further arranged to receive data from said detector corresponding to said detected fluorescent light and provide a data file representing an array of photon counts as a function of a pixel position on said surface.

12. (original) The apparatus of claim 11, wherein said computer is further arranged to generate an image file including data indicative of fluorescence intensity level as a function of said substrate pixel position.

13. (original) The apparatus of claim 11, wherein said detector comprises a confocal detector including a pinhole.

14. (original) The apparatus of claim 11, wherein said detector comprises a photodiode utilized for said auto-focusing and a photomultiplier for detecting said fluorescent light.

15. (original) The apparatus of claim 11, wherein said computer executes said auto-focusing by interpolating focusing values determined for said corners of said surface having a planar shape.

16. (original) The apparatus of claim 11, wherein said computer executes said auto-focusing by bringing into focus all four of said corners of said surface.

17. (original) The apparatus of claim 16, wherein said computer executes said auto-focusing by interpolating focusing values determined for said four corners of said surface having a planar shape.

18. (original) The apparatus of claim 11, wherein said translation system includes an x-y-z- translation stage.

19. (original) The apparatus of claim 11, wherein said optical train separates reflected excitation light from said surface of said substrate from fluoresced light from said surface.

20. (original) An apparatus comprising:

a light source constructed to emit excitation light;

an optical train for directing said excitation light from said light source at a substrate including a surface having fluorescently marked regions;

a translation system co-operatively arranged with said optical train and constructed to support and displace said substrate;

an auto-focusing system constructed and arranged to focus said excitation light onto said surface;

a detector for detecting fluorescent light from said fluorescently marked regions of said surface in response to said excitation light; and

a computer arranged to receive data from said detector corresponding to said detected fluorescent light of individual pixels of said surface and determine a dynamic range for data scaling; said computer being further arranged to scale said data

and provide a data file representing an array of photon counts as a function of a pixel position on said surface.

21. (original) The apparatus of claim 20, wherein said computer is further arranged to scale said data using logarithmic scaling.

22. (original) The apparatus of claim 21, wherein said computer is further arranged to generate an image file including data indicative of fluorescence intensity level as a function of said substrate pixel position.

23. (original) The apparatus of claim 20, wherein said computer is further arranged to scale said data using linear scaling.

24. (original) The apparatus of claim 23, wherein said computer is further arranged to generate an image file including data indicative of fluorescence intensity level as a function of said substrate pixel position.

25. (original) The apparatus of claim 24, wherein said computer is arranged to control operation of said light source, said detector, said translation system and said auto-focusing system to execute auto-focusing by controlling said translation system and bringing into focus corners of said surface

26. (original) The apparatus of claim 25, wherein said auto-focusing system determines a focal plane of the light passing through said optical train.

27. (original) The apparatus of claim 26, wherein said optical train separates reflected excitation light from said surface of the substrate from fluoresced light from said surface.